

1 -- 59. A monomer composition characterized by being curable to form a resin
2 suitable for optical products consisting essentially of:
3 a first monomer represented by the formula:
4 $R(NCY)x$
5 wherein R is a hydrocarbon or substituted hydrocarbon radical, Y is oxygen or
6 sulfur and x is two or more;
7 a second polyene monomer wherein the polyene contains only vinyl functional
8 groups; and
9 a third polythiol monomer.

1 60. The composition of claim 59 wherein Y is oxygen.

1 61. The composition of claim 60 wherein the polyene is represented by the
2 formula:



4 wherein R_1 is H or CH_3 ; A is oxygen, sulfur, or NH; R_2 is a polyvalent aliphatic,
5 alicyclic or aromatic hydrocarbon residue, and y is 2-6.

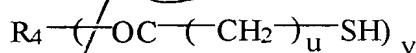
1 62. The composition of claim 61 wherein the polyisocyanate monomer is an
2 aromatic diisocyanate.

1 63. The composition of claim 62 wherein the polyene monomer is a tri, or
2 tetraacrylate compound.

1 64. The composition of claim 63 wherein the polythiol monomer is selected
 2 from the group consisting of a compound represented by the formula:

3 $\text{HB}-\text{R}_3-(\text{BH})_z$

4 wherein R_3 is an organic group consisting of polyvalent aliphatic or alicyclic and
 5 aromatic hydrocarbon, z is an integer of 1 to 3, and B is S; and



7 wherein R_4 is a substituted or unsubstituted aliphatic polyhydric alcohol residue, u
 8 is an integer of 1 or 2, and v is an integer of 2 to 4.

1 65. The composition of claim 64 wherein the polyisocyanate is m-xylylene
 2 diisocyanate, the polyene is pentaerythritol tetraacrylate, and the polythiol is
 3 selected from the group consisting of pentaerythritol tetrakis(2-mercaptopoacetate),
 4 1,2-ethanedithiol and mixtures thereof.

1 66. The composition of claim 64 wherein the polyene is triallyl-1,3, 5-triazine-
 2 2,4,6(1H, 3H, 5H)-trione.

1 67. A process for making resins suitable for optical uses comprising reacting a
 2 curable composition comprising the composition of claim 59.

1 68. The process of claim 67 wherein the monomers are admixed under non-
 2 reactive conditions.

1 69. The process of claim 67 wherein the monomers are admixed at a
2 temperature of room temperature or below.

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1 70. The process of claim 69 wherein an ~~initiator~~ is added to the composition.
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1 71. The process of claim 70 wherein the initiator is 1,1'-
2 azobis(cyclohexanecarbonitrile) and a reaction catalyst is dibutyltindilaurate or
3 tributylamine.

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1 72. The process of claim 67 wherein the composition is cured by heating the
2 composition to a first temperature of about 0° to 60°C, then heating the
3 composition gradually to a second temperature of about 100 to 150°C over a
4 period of about 1 to 32 hours, maintaining the composition at the second
5 temperature for about 4 to 32 hours, then cooling the composition to a third
6 temperature of about 20 to 40°C over a period of about 1 to 32 hours.

1 73. The composition of claim 59 wherein photochromic materials are used to
2 provide a tinted optical product.

1 74. The composition of claim 73 wherein the photochromic materials are
2 naphthopyran compounds, spiro compounds or indoline compounds.